

PRESENT TRENDS IN SYSTEMATIC ENTOMOLOGY.  
SCIENTIFIC NAMES.<sup>1</sup>

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Of the several millions of kinds of plants and animals in the world, there are some hundreds that any one of us may wish casually to refer to. These have received "common" names and if they alone existed, scientific names would be unnecessary. My present concern is only with the remaining millions. How shall we tag each one of those millions so that on the rare occasion when one of us must mention it to another we can make ourselves understood?

In ancient times the problem was hardly visualized. The hundreds received each a name. Any other creature was a "creeping thing after his kind." In the next stage, the idea "his kind" was represented in some way and we have the beginning of our scientific scheme. At this stage we have a name—a group name—that any one can understand, and the distinguishing word or words that mark a single member of that group:—a butterfly, "Papilio" and *that brown* butterfly, "Papilio fuscus," or the particular brown one with eyespots, "Papilio fuscus ocellatus."<sup>2</sup>

Linnaeus began with this plan, which had grown up gradually, and took a step further. Instead of a series of adjectives he chose—arbitrarily—one single word to designate a particular kind of butterfly. He did it casually, it was just a convenient tag,—a *nomen triviale*. And with this step the present cycle begins. That "trivial name" was so convenient that it overshadows our whole system of names. The oldest name (the common name) was known to all and needed no rules; the second type was descriptive, at least in rudiment, and took care of itself, but the new "trivial" kind was arbitrary; it carried no meaning in itself, but only by agreement; so it was necessary to find a basis of agreement.

<sup>1</sup>See footnote on page 11 of this issue.

<sup>2</sup>My examples are imaginary.

There are three bases of agreement:—

AUTHORITY

PRIORITY

JUDGMENT

The assignment of names may be put in the hands of some *Authority*. During Linnæus's life, by a sort of general consent he was recognized as the Authority: when he used a name that name stood, when he saw fit to change it, the world changed too. And when Linnæus died, his successor, Fabricius, stepped into his place (I am speaking of entomology). Fabricius seems to have claimed this mantle of authority, but it was not unanimously conceded to him, and as disputed authority without power is no authority, this policy fell into abeyance until the formation of our International Commission.

The second obvious plan was *Priority*. Let the oldest name rule, beginning with the book in which Linnæus first proposed this scheme of things.<sup>1</sup> This sounds excellent, but complications soon arose. Let us consider merely the "trivial name." Two workers recognize or discover a species about the same time in different countries. Each gives it a trivial name, and each name gets currency in its own country before it is recognized that both are the same creature. Then the question is raised: Which is prior? If there is doubt, and there well may be, each country favors its own worker, and we have two or more rival names.

At the time that Fabricius retired from the field we have a further complicating factor that *we* can appreciate better than the last generation. That was the time of the Napoleonic wars, and literature did not always travel freely. Also there was a nationalism that interfered with the application of the law of priority when a national difference of usage appeared. We have one outstanding case in the Lepidoptera, where all these difficulties fell together—Hübner. Hübner was a rival of the authority of Fabricius; his works were irregularly used and carelessly dated if at all; and he was

<sup>1</sup>For a long period the tendency was to reserve Linnæus' own authority, and begin the rule of priority at the point where Linnæus laid it down.

publishing in Germany at a time when it was cut off from France.<sup>1</sup> As a result names he gave have been a bone of contention from the beginning. And from the beginning there has been a tendency to give the other party the benefit of the doubt, whenever there was any uncertainty of priority of date.

Now appears the third policy, *Judgment*. From this period of confusion and for a century more, most authors gave up hope of agreement on any *authority*, or of any certainty of *priority*, and merely used the name they thought most likely to be correctly understood by their readers.

So much for the "trivial" name.

Next is the genus; in this case we have all the factors we have been displaying in the matter of the trivial name, affecting the name as a *name*; and superposed on this we have a second, confusing factor. Besides *nomenclature*, we have *classification*. At first the genus name was merely the vernacular (Latin) name, familiar to every one who read Latin. Every butterfly was *Papilio*, every moth, *Phalæna*. But even in Linnæus' time it seemed necessary to divide this mass, for instance to have a name by which we could tag all the "four-footed" butterflies; and there gradually came, with an emphasis on more and more abstruse characters a steady subdivision of the original genus.

This raised the question: when you divide a genus, which part takes the old name, and which gets the new one? Here we have two choices,—or three. We may try in one way or another to find which the original author thought most characteristic of his name, and center our new group about that species (the type), or we may leave it to the man who divides the genus to use his judgment. There is a third method, largely used, I believe by ichthyologists, but also by a few entomologists—to cut the Gordian Knot, and arbitrarily choose the species the author happened to mention first. Some would qualify this choice in one way or another; a few have applied it even where the author expressly says his first species is not typical, or where his first species, in contrast to others, violates his definition.

<sup>1</sup>My friend Benjamin finds his "Tentamen" (issued in 1806) was used or referred to in practically every country but France.

Our present code orders us to use the type method. For the past half century the other two methods were almost consistently in vogue. And this change—in origin a compromise between these two in themselves wholly contradictory methods—is the basis of a large proportion of the recent violent shifts in names.

The code supplies a nominal loophole in the “conservanda principle.” If a name is in general use, though it violates the code it may be validated (in one or another way) by the Commission in suspension of rules. Unfortunately this method breaks down, because the preparation of a case and the validation is a long and tedious matter, and in the meantime code-enthusiasts take up the technically valid but dormant name, so that long before a decision is reached, the unanimity on which a decision should be based has vanished. And where there is any real uncertainty, with a resulting real confusion of use, the process has generally broken down completely.

There is a complication which seems at first minor, but works out near the bottom of most of our practical difficulties. This is where the two names have been given to what is practically the same list of species. In that case shall we treat the two names strictly as synonyms, or if the group is later divided, shall we use each of these names for one of the later groups? The latter has been rather the tendency, but the practical result of our present code is highly inconsistent, and the earlier practice (so-called elimination method, actually giving the right to the first reviser) produced a high per cent of ambiguous cases, mainly because the two authors who had originally proposed the rival names hardly ever had just the same assortment of species before them. In practice we cannot be quite sure whether they meant the same thing or not.

Take *Danaus*, *Pieris*, *Pontia*, etc.,—these half a dozen names were all intended primarily for the cabbage butterflies. Yet each author had doubtless a different conception. Linnæus, who included the monarch, certainly did not have quite the same conception as the later workers.

Thirdly we have the names of groups. This is also a very old category, as Aristotle if not even earlier philosophers,

had their groups of animals and plants, Entoma and the rest. Where our recent history of genera and species has been a war of policies and codes, the group names till very recently have been nearly free from all this. Practically our present code only requires two things, (1) if the group name is based on a genus, it must be a genus-name recognized as valid by the writer; (2) it must not be a homonym. Outside of this we have merely the policy of "judgment" formerly in use for all names, and still in use for morphological nomenclature and the like.

Just before the war began a movement to bring these group names also under a strict law of priority. It was sponsored in the fields best known to me by people who had a unique code somewhat different from the official one, and resulted in some weird changes as they applied it. This first attempt was to require that the name of each family must be based on the *oldest* genus-name in it, regardless of whether that name had ever been used as the basis of a group-name before.

Another worker has (for family names) considered those names which end in the present conventional ending for family names (-idæ), and applied the law of priority strictly on that basis. Others give priority to the oldest group-names involved, regardless of its exact form, and modify it to the conventional present-day form for the category concerned.

Most recently there has appeared a group who wish to extend the "type" principle to these group names, and have a certain species (or genus) chosen as type of each higher group, which shall always be in the group. In this case if the type genus changes its name the family will also change to the corresponding name.

An example: Our *Ctenucha virginica* belongs to a certain family, long known as the *Syntomidæ*. The genus *Syntomis* is a synonym of *Amata*, so (unless the present hopelessly slow conservanda mechanism comes into play), we must abandon *Syntomidæ* even under the present brief provisions of the code. The type of the *Syntomidæ* may be considered *Syntomis phegea*, the type of *Syntomis* as generally used, now become *Amata phegea*. Shall then the name of the new family



be *Amatidæ*, as used by Hampson? or shall we resurrect the old name of Packard, Grote and others and call it *Euchromiidæ*, *Euchromia* being a perfectly valid genus, but in another subfamily?

What then, is the *tendency* in nomenclature? I see two, definitely at war with each other. One is in nearly complete control of one field (the specialists in nomenclature), the other has nearly as strong a hold in another (the general workers). *First* we have an attempt to rectify law by more law,—to improve, supplement and clarify our present code by further legislation. I know the weight of colleagues of mine behind this point of view, which is exceedingly plausible, for it would seem as if by either rule or judicial decision a million names might be managed as well as a million people. But new people are born, and new problems arise, and personally I see no end. There is the further difficulty that we have only one court for first and final resort alike. Its docket is hopelessly crowded now, and yet it only passes on a minute proportion of the cases in urgent need of decision. If we wait for this method the millenium will see us waiting; if we apply the rules informally and unofficially on each doubtful case that comes our way, experience has already shown that we will come to about as many conclusions as there are entomologists.

Finally we may return to the practice that arose in the days of the Napoleonic wars, when the old custom of Swedish authority broke down. Let each man choose the name that he thinks least likely to be misunderstood by his readers, regardless of rules, precedents and priorities. This will obviously lead to inconsistencies, to current synonyms side by side, and, perhaps most serious, to divergent national uses. But experience seems to indicate that there will be a gradual drift toward uniformity, for after all, the name most in use is the one most likely to be correctly understood, and a name already in dominant use will with steadily increasing momentum, tend to occupy the field.

It seems to me that in the field of major groups, where there has never been a formal code, and confusion is not really great at present, this is the only true good policy.

When we come to genera and species, where we have

complex existing codes, the matter is less simple. I believe it is best to follow the code wherever we can do it without confusion; but to anticipate the likelihood of a conservanda decision in many cases where a strict interpretation of the code would seem to overturn a well-known name, and continue to use the current name in the interim, till the preparation and decision of a case before the Commission is possible. But *when a definite decision leads to a definite name*, to accept the decision as promptly as possible. A decision which leaves a residual ambiguity, as in a recent notable case, I should not interpret as a final decision.

We end, then, much as we began under Linnæus; with *Authority*, qualified by *Judgment*, especially where authority does not lead to an unambiguous result; following *Priority* as far as practicable, but not making it the final arbiter.